Roland ED

PC-70

MIDI KEYBOARD CONTROLLER

Owner's Manual

Thank you, and congratulations on your choice of the Roland PC-70.
The PC-70 is an easy-to-operate, dedicated keyboard controller for GS compatible sound modules.

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (p. 3; p. 6). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About ⚠ WARNING and ⚠ CAUTION Notices

⚠WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings.The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
⊗	The ◯ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
☞	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

-------------------------------------- **ALWAYS OBSERVE THE FOLLOWING** --------------------------------------

⚠WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.

....

- Do not open (or modify in any way) the unit or its AC adaptor.

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- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

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- Never use or store the unit in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Exposed to rain; or are
  - Dusty; or are
  - Subject to high levels of vibration.

⚠WARNING

- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

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- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.

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- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

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- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.

3

⚠ WARNING

• Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
  • The AC adaptor or the power-supply cord has been damaged; or
  • Objects have fallen into, or liquid has been spilled onto the unit; or
  • The unit has been exposed to rain (or otherwise has become wet); or
  • The unit does not appear to operate normally or exhibits a marked change in performance.

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• In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

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• Protect the unit from strong impact. (Do not drop it!)

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• Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

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• Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

⚠ CAUTION

• The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.

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• Always grasp only the plug or the body of the AC adaptor when plugging into, or unplugging from, an outlet or this unit.

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• Whenever the unit is to remain unused for an extended period of time, disconnect the AC adaptor.

....

• Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.

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• Never climb on top of, nor place heavy objects on the unit.

....

• Never handle the AC adaptor body, or its plugs, with wet hands when plugging into, or unplugging from, an outlet or this unit.

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• Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.

....

• Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet (p. 10).

....

• Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.

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IMPORTANT NOTES

In addition to the items listed under "USING THE UNIT SAFELY" on page 3, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).

- The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.

- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

- To avoid possible breakdown, do not use the unit in a wet area, such as an area exposed to rain or other moisture.

- Do not allow objects to remain on top of the keyboard. This can be the cause of malfunction, such as keys ceasing to produce sound.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.

- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.

- Never strike or apply strong pressure to the display.

- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.

- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).

- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

- When you turn on the power, never push keys or buttons. This can be the cause of malfunction.

■ About the PC-70

The Roland PC-70 is a MIDI keyboard controller. It does not contain any sound-generating circuitry, since it is designed to provide for the convenient transmission of Program Change and Bank Select messages, as well as a variety of other MIDI messages (such as reverb and chorus information) to an external sound module. It is particularly suited for controlling sound modules that comply with the GS Format. (Called simply "GS sound modules" in the following.)

■ What is the General MIDI?

General MIDI is a set of recommendations which seeks to provide a way to go beyond the limitations of proprietary designs, and standardize the MIDI capabilities of sound generating devices. Sound generating devices and music files that meet the General MIDI standard bear the General MIDI logo (𝗺𝗶𝗱𝗶).

Music files bearing the General MIDI logo can be played back using any General MIDI sound generating unit to produce essentially the same musical performance.

■ What is the General MIDI 2?

The upwardly compatible General MIDI 2 (𝗺𝗶𝗱𝗶2) recommendations pick up where the original General MIDI left off, offering enhanced expressive capabilities, and even greater compatibility.

Issues that were not covered by the original General MIDI recommendations, such as how sounds are to be edited, and how effects should be handled, have now been precisely defined. Moreover, the available sounds have been expanded.

General MIDI 2 compliant sound generators are capable of reliably playing back music files that carry either the General MIDI or General MIDI 2 logo.

In some cases, the conventional form of General MIDI, which does not include the new enhancements, is referred to as "General MIDI 1" as a way of distinguishing it from General MIDI 2.

■ What is the GS Format?

The GS Format (◈) is Roland's set of specifications for standardizing the performance of sound generating devices. In addition to including support for everything defined by the General MIDI, the highly compatible GS Format additionally offers an expanded number of sounds, provides for the editing of sounds, and spells out many details for a wide range of extra features, including effects such as reverb and chorus. Designed with the future in mind, the GS Format can readily include new sounds and support new hardware features when they arrive.

About the Sounds Contained in a GS Sound Module

A GS sound module contains 128 basic sounds (Capital Tones) and a number of Variation Tones. The mapping for the Capital Tones is compatible with Level 1 of the General MIDI System. Capital Tones are stored in Bank 0, while the Variations are stored in Banks 1 through 127. The selection of Variation Tones that are made available will be different depending on the sound module. You should check the manual for any module you are going to use, and familiarize yourself with the sound collection it contains.

About the Drum Sets Provided by a GS Sound Module

The Drum Channel (ch. 10) provides for the use of several Variation Sets in addition to the basic Drum Set (Standard Set: PC #1). Drum Sets are selected using Program Change messages. The types of Variation Sets that are made available will be different depending on the sound module. Refer to the manual for the module you are using so you know what kinds of drum sets it contains.

* *If a Variation Tone or Variation Drum Set you have requested is not found in the GS module you are using, the module may not sound at all, or an incorrect sound may be played.*

■ Main Features

Superb Playability and Expressiveness

Since this standard 49-key keyboard also provides response to velocity, it allows you to express even the finest nuances. In addition, an Octave Shift feature allows you to conveniently shift the soundable range up or down by an octave. Moreover, it is equipped with a pitch/modulation wheel, and provides a jack for connecting a damper pedal.

Complete Range of Control Features

Since the keyboard provides for sound selections that use combinations of Program Change and Bank Select messages (value for CC 00 and CC 32), you can also select any of the Variation Tones that may be available on a GS sound module.
In addition, a variety of continuous controllers (Control Changes) can be assigned to the data entry slider. The slider can then be used for variable control over the desired parameter (reverb or chorus depth, for example) on a GS sound module.
Viewing the contents of the LED display allows you to operate easily and precisely.

Makes Desk Top Music (DTM) More Enjoyable

The PC-70 is very compact, so it requires only a minimal amount of desktop space. The keyboard is sure to become an invaluable part of any DTM setup, since it can be used for real-time or step recording, as well as for practice while listening to "minus-one" playback.

Panel Descriptions

[1] PITCH / MODULATION Wheels

[2] OCTAVE UP / DOWN / STANDARD Buttons

[3] MIDI / SELECT Button

[4] DISPLAY(LED)

[5] DATA ENTRY Slider

[6] MIDI CHANNELS (1 to 16)

[7] AFTERTOUCH

[8] VELOCITY

[9] CHORUS LEVEL

[10] REVERB LEVEL

[11] PANPOT

[12] VOLUME

[13] CC SELECT(Select Control Change)

[14] CC32

[15] CC00

[16] PC(Program Change)

[17] NUMERIC ENTRY Section (0 to 9)

[23] POWER Switch

[22] AC Adapter Jack

[21] SUSTAIN SWITCH Jack

[20] MIDI OUT Connector

[18] CANCEL

[19] ENTER

Roland ED PC-70 MIDI KEYBOARD CONTROLLER

SUSTAIN SWITCH

DC IN 9V

POWER

ON OFF

MIDI OUT

USE ROLAND ACI OR ACP ADAPTOR ONLY

Power

How to Connect the AC Adaptor

The PC-70 can be powered by an AC adaptor.
Be sure to use only the attached AC adaptor. Using any other adaptor may cause malfunction or electric shock.

1. Check that the unit is OFF.

2. Connect the AC adaptor to the AC Adaptor jack, then connect the plug to a power outlet.

*   *To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.*

*   *If the unit is to remain unused for an extended period of time, unplug the AC adaptor.*

Setting Up the PC-70

The PC-70 is a MIDI controller. Although it contains no sound-generating circuitry of its own, it can effectively control external units (sound module, computer, etc.) by transmitting a wide variety of MIDI messages.
To ensure maximum benefit from your system, be sure to read this manual and the manuals for all external equipment.

■ Sound Module Setup

Connect between the MIDI OUT connector on the PC-70 and the MIDI IN connector on the sound module.

*   *To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.*

Monitor speakers (self-powered)

INPUT jacks

MIDI OUT

PC-70

MIDI IN

OUTPUT jacks

LINE IN jacks,
AUX jacks,
or TAPE IN jacks

Sound Module

Stereo set, etc.
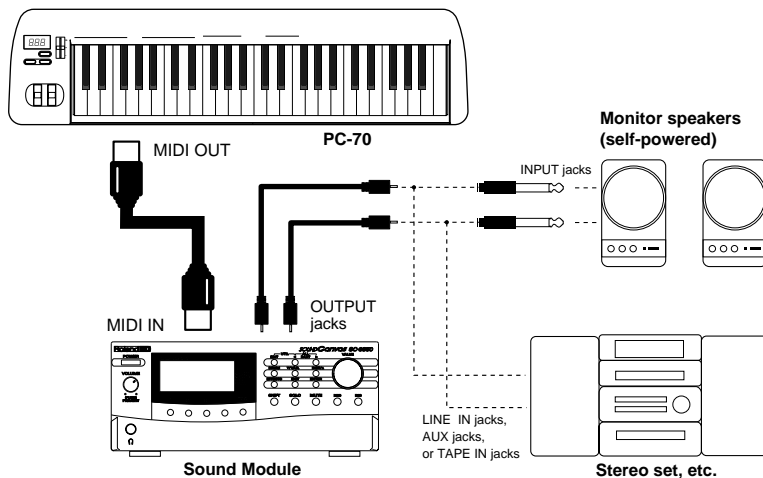
■ Desk Top Music Setup

* *When connecting your computer with a sound module, use only a cable which is designed for the model of computer you are using and its particular kind of connector.*

* *If the sound module has a COMPUTER switch, make sure it is set to the appropriate position. The correct position will vary depending on the type of computer, the way you are connecting with it, and the requirements of the software you are using.*

Computer Connected Using the Serial Connector on the Sound Module
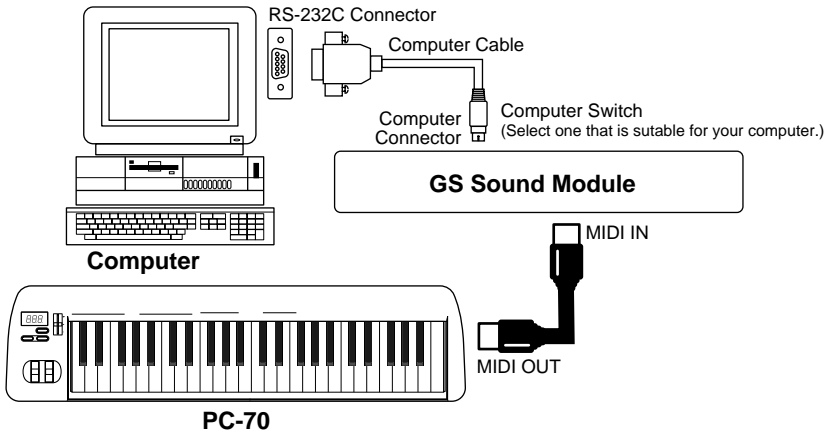
Computer Connected Using the MIDI IN Connector on the Sound Module
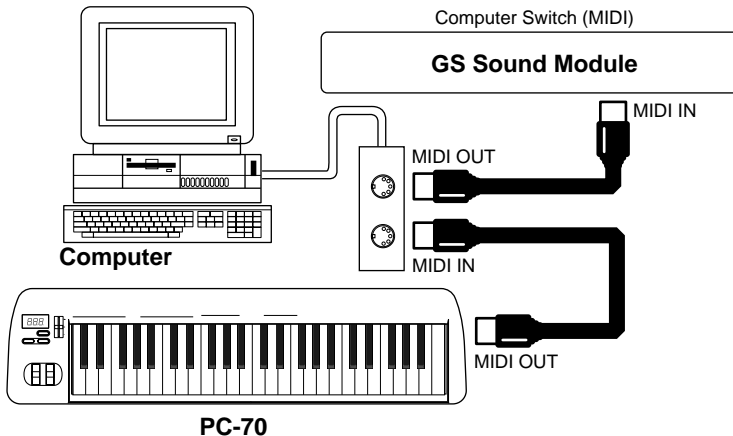
Powering Up

* Once the connections have been completed (p. 10), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

Power to the various devices should be turned on in the appropriate order. First, turn on the units from which MIDI messages will originate (computer, PC-70). Next, turn on the sound module, then the audio reproduction equipment. This unit's **power switch [23]** is located on its rear panel.
Power off your system in the reverse order.

* This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

Setting the MIDI Channel (MIDI Transmit Channel)

To control the sound module, set the MIDI channel the PC-70 will use to transmit on to the same channel the module is using to receive on. If the sound module is multitimbral, set the channel on the PC-70 so it matches the MIDI channel of the Part in the module that you wish to control.
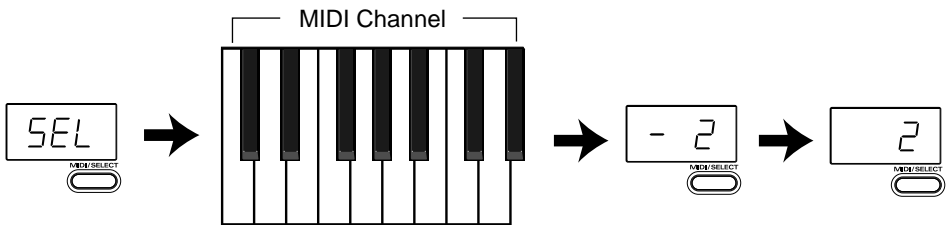
[Procedure]

1. Press **MIDI/SELECT [3]** (LED will show "SEL").
2. Select the MIDI channel by pressing one of the 16 keys in the **MIDI channel section [6]**.
3. Press **MIDI/SELECT [3]** again to confirm your selection.

Selecting Sounds on a GS Sound Module (Sending Program Change/Bank Select Messages)

Program Change/Bank Select messages are used for changing Tones for an ordinary instrument Part, and for changing Drum Sets for the Drum Part (GS: ch. 10).

Changing Sounds in a GS Sound Module

To change Tones in a GS module, you need to send the Bank Select message (consists of the values for Controller Numbers [CC] 00 and 32) together with the Program Number.
The value of Controller Number 00 (MSB) and that of Controller Number 32 (LSB) work together as a pair to specify a Bank. The Program Number that comes immediately after completes the switch to the desired sound.
On the PC-70, these three messages are always sent as one set:

- Value of Controller Number 00 (MSB)
- Value of Controller Number 32 (LSB)
- Program Number xx

* *You can conveniently refer to the GS/GM sound group list printed on the upper-right part of the PC-70's panel when specifying a Program Number.*

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part (in the sound module).
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **G#4 black key (CC 00) [15]**.
4. Select the value of Controller Number 00 by pressing keys in the **NUMERIC ENTRY section [17]**.
5. Press **ENTER [19]**.
6. Press the **F#4 black key (CC 32) [14]**.
7. Select the value of Controller Number 32 by pressing keys in the **NUMERIC ENTRY section [17]**.
8. Press **ENTER [19]**.
9. Press the **A#4 black key (Program Change [PC]) [16]**.
10. Select the Program Number by pressing keys in the **NUMERIC ENTRY section [17]**.
11. Press **ENTER [19]**.
12. Press **MIDI/SELECT [3]** again to confirm your selection.

[Example]

How to select the sound of Variation No. 8, Instrument No. 3 (Piano 3w) on the SC-8850:

1. Set the MIDI transmit channel to match that of the desired Part in the module.
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **G#4 black key (CC 00) [15]**.
4. Press the "8" key in the **NUMERIC ENTRY section [17]**.
5. Press **ENTER [19]**.
6. Press the **F#4 black key (CC 32) [14]**.
7. Press the "4" key in the **NUMERIC ENTRY section [17]**.
8. Press **ENTER [19]**.
9. Press the **A#4 black key (PC) [16]**.
10. Press the "3" key in the **NUMERIC ENTRY section [17]**.
11. Press **ENTER [19]**.
12. Press **MIDI/SELECT [3]** again to confirm your selection.

Changing Drum Sets in a GS Sound Module

The Drum Part (ch. 10) of a GS module does not respond to Bank Select messages. However, if you try to send only a Program Change message from the PC-70, a Bank Select message will end up being transmitted along with it anyway because the data for the last sound specified will have been retained in memory. For this reason, you should always send a value of 0 for Controller Numbers 00 and 32 first, then send the Program Number in order to make sure you obtain the Drum Set you need.

[Procedure]

1. Set the MIDI transmit channel to 10.
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **G#4 black key (CC 00) [15]**.
4. Press the "0" key in the **NUMERIC ENTRY section [17]**.
5. Press **ENTER [19]**.
6. Press the **F#4 black key (CC 32) [14]**.
7. Press the "0" key in the **NUMERIC ENTRY section [17]**.
8. Press **ENTER [19]**.
9. Press the **A#4 black key (PC) [16]**.
10. Select the Program Number by pressing keys in the **NUMERIC ENTRY section [17]**.
11. Press **ENTER [19]**.
12. Press **MIDI/SELECT [3]** again to confirm your selection.

[Example]
How to select the PC #49 Drum set (ORCHESTRA Set) on the SC-8850:

  1. Set the MIDI transmit channel to 10.

  2. Press **MIDI/SELECT [3]** (LED will show "SEL").

  3. Press the **G#4 black key (CC 00) [15]**.

  4. Press the "0" key in the **NUMERIC ENTRY section [17]**.

  5. Press **ENTER [19]**.

  6. Press the **F#4 black key (CC 32) [14]**.

  7. Press the "0" key in the **NUMERIC ENTRY section [17]**.

  8. Press **ENTER [19]**.

  9. Press the **A#4 black key (PC) [16]**.

  10. Press the "4" key and then "9" in the **NUMERIC ENTRY section [17]**.

  11. Press **ENTER [19]**.

  12. Press **MIDI/SELECT [3]** again to confirm your selection.

Features Useful When Playing

Applying Pitch Changes to Notes (Pitch Bend)

Move the **BENDER wheel [1]** (up or down) to transmit Pitch Bend messages, and apply subtle pitch changes to notes.

* *The Pitch Bend range varies depending on how it is set on the sound module.*

Modifying the Sound of Notes: Modulation (CC 01)

Moving the **MODULATION wheel [1]** (up or down) will transmit Modulation messages, changing the sound in real time (usually by adding a vibrato effect).

* *The change obtained with this message will vary depending on the settings for your sound module (the section which handles modulation), or the Tone selected.*

Adding a Sustain Effect to Notes: Hold 1 (CC 64)

After connecting a pedal switch, you can depress it while playing to send the Hold 1 message (CC 64), causing notes that were playing to be sustained. If an electric organ or other normally sustained type sound was being sounded, the notes will continue for as long as you have the pedal down. The pedal switch should be connected to the **SUSTAIN SWITCH jack [21]** on the rear of the unit.
Depressing the pedal will transmit an ON value (127), while releasing it will transmit an OFF value (0).

* *The Hold 1 (CC 64) function can be assigned to the **DATA ENTRY slider [5]**, allowing you to obtain the damper effect by moving the slider.*

Changing Octaves

Using the **OCTAVE [2]** buttons (UP, DOWN), the soundable range of the keyboard can be shifted up or down by one octave, making it possible to access all of the notes from **C0** to **C8**.

Ex.) Shift the Sound Range Up One Octave: OCTAVE UP

Press UP in the **OCTAVE [2]** once; the keyboard will now offer notes within a range an octave higher.

C3 (48)   *o 4* ➡ *o 5*   C7 (96)
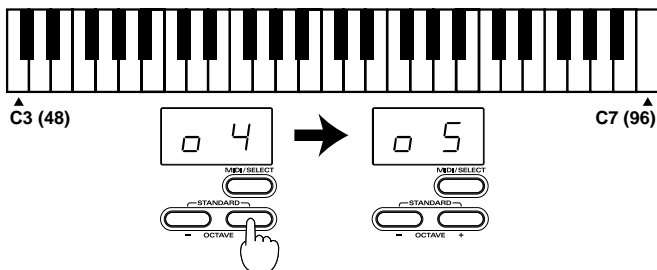
Ex.) Shift the Sound Range Down One Octave: OCTAVE DOWN

Press DOWN in the **OCTAVE [2]** once; the keyboard will now offer notes within a range an octave lower.

C1 (24)   *o 4* ➡ *o 3*   C5 (72)
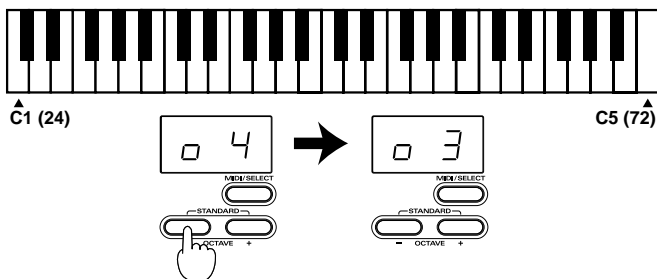
Return to the Normal Sound Range: STANDARD

Press UP and DOWN simultaneously.

C2 (36)   *o 4*   C6 (84)
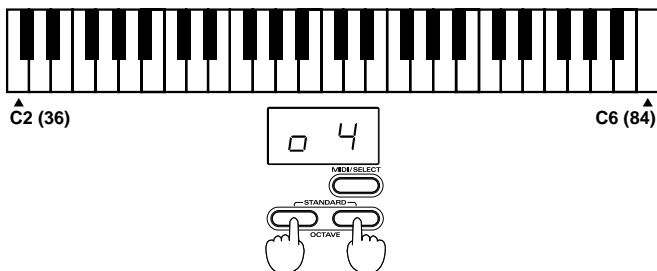
Controlling a Sound Module with the DATA ENTRY Slider

The following functions can be assigned to the **DATA ENTRY slider**:

Function nameDescription

Channel Aftertouch Alters notes currently being played

VelocityChanges dynamics

Reverb Send Level (CC 91)Sets the depth of Reverb

Chorus Send Level (CC 93)Sets the depth of Chorus

Volume (CC 07)Sets the volume level of the Part

Panpot (CC 10)Sets sound position (localization in the stereo sound field)

CC 00 to 127Depends on the selected Controller Number

* *Since a slider control accesses digital information, it might not produce any noticeable change in the value if moved by only a small amount. If this happens, move the slider up and down once, then set the value.*

Altering the Timbre of Notes Currently Being Played (Channel Aftertouch)

The keyboard on the PC-70 cannot transmit Channel Aftertouch messages. However, such messages can be transmitted by assigning the Channel Aftertouch function to the **DATA ENTRY slider** on the PC-70.

Channel Aftertouch is a function that lets you alter notes (that have already been played) by applying additional pressure on the keys. The PC-70 can create this Aftertouch effect— simply move the **DATA ENTRY slider** after Aftertouch has been assigned to it.
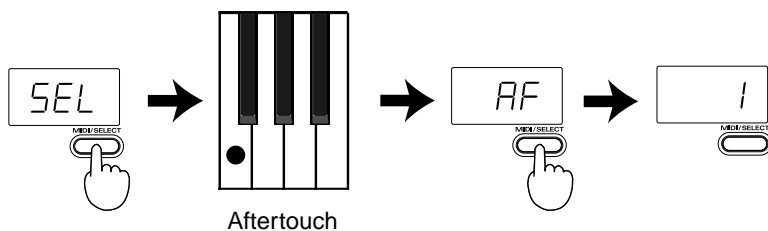
Aftertouch

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.

2. Press **MIDI/SELECT [3]** (LED will show "SEL").

3. Press the **F3 white key (AFTER TOUCH) [7]**.

4. Press **MIDI/SELECT [3]** again to confirm your selection. Now, when you move the **DATA ENTRY slider**, Channel Aftertouch messages (with a value reflecting the slider's position) will be transmitted.

* *A GS sound module will not respond to Aftertouch messages while it remains set at its factory defaults. For details, refer to the owner's manual for the sound module you are using. Computer users should consult the owner's manual for their software, since it may be possible to select a response for Channel Aftertouch within the software.*

Changing the Velocity Sensitivity: Velocity

Whenever a key is pressed on the instrument, the value for velocity will be transmitted along with the note information. The following setting allows you to choose the sensitivity of the response to velocity (range of possible change).

Slider position: minimum   Slider position: center   Slider position: maximum

Velocity value / Strength of key touch

Velocity

[Procedure]

1. Set the MIDI channel to match that of the Part (sound module) to be controlled.

2. Press **MIDI/SELECT [3]** (LED will show "SEL").

3. Press the **F#3 black key (VELOCITY) [8]**.

4. Press **MIDI/SELECT [3]** again to confirm your selection. Move the **DATA ENTRY slider** to select the minimum value, thus setting the desired range for velocity. With the slider at its maximum, velocity values within the entire 1–127 range can be generated.

Changing the Chorus Depth: Chorus Send Level (CC 93)

This function allows you to set the Chorus depth for each Part.
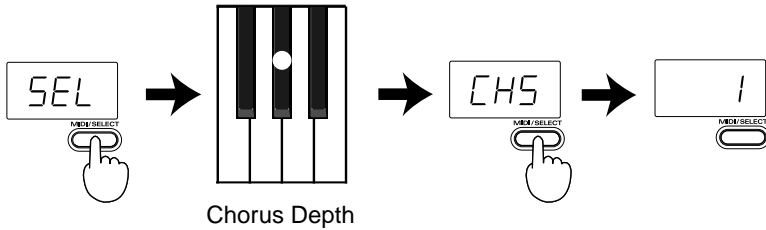
Chorus Depth

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.

2. Press **MIDI/SELECT [3]** (LED will show "SEL").

3. Press the **A#3 black key (CHORUS LEVEL) [9]**.

4. Press **MIDI/SELECT [3]** again to confirm your selection. Now you can use the **DATA ENTRY slider** to select the value transmitted for the Chorus Send Level (Effect 3 Depth).

   * *When a sound module other than a GS module is being used, the relevant parameter may not correctly respond to CC 93 messages.*

Changing the Reverb Depth: Reverb Send Level (CC 91)

This function allows you to set the Reverb depth for each Part.
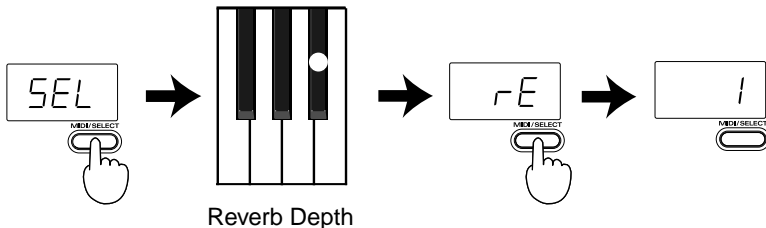
Reverb Depth

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.

2. Press **MIDI/SELECT [3]** (LED will show "SEL").

3. Press the **G#3 black key (REVERB LEVEL) [10]**.

4. Press **MIDI/SELECT [3]** again to confirm your selection. Now you can use the **DATA ENTRY slider** to select the value transmitted for the Reverb Send Level (Effect 1 Depth).

   * *When a sound module other than a GS or General MIDI module is being used, the relevant parameter may not correctly respond to CC 91 messages.*

Setting the Sound Location: Panpot (CC 10)

When the module is connected so its sounds are produced in stereo, this parameter determines the stereo placement (L/R) of the individual sounds produced. For the Drum Part (ch. 10), it alters in a relative manner the overall Panpot setting for percussive instruments (the overall orientation of the Drum Part on a GS module).
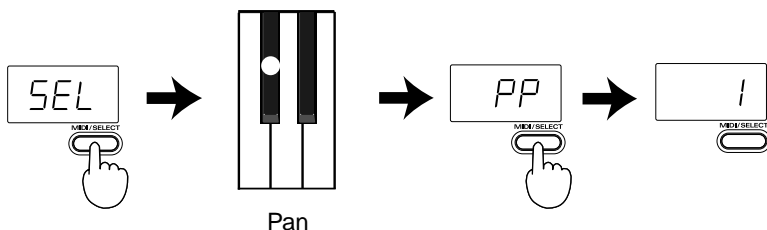
Pan

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **C#4 black key (PANPOT) [11]**.
4. Press **MIDI/SELECT [3]** again to confirm your selection. Now you can use the **DATA ENTRY slider** to set the value to be transmitted for the Panpot. With the slider at the center, the sound will be oriented in the center. When pulled all the way forward, the sound will be heard from the extreme left. When pushed completely back, the sound will come from the right.

Changing the Volume: Volume (CC 07)

This function allows you to adjust the volume level for each Part.
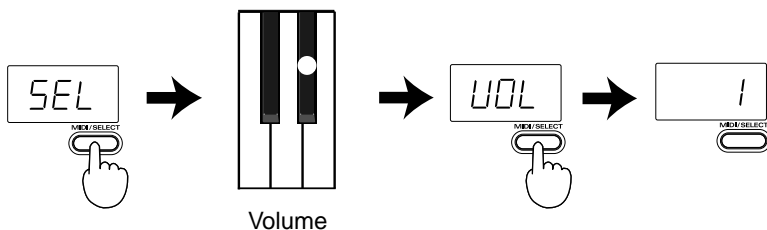
Volume

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **D#4 black key (VOLUME) [12]**.
4. Press **MIDI/SELECT [3]** again to confirm your selection. Now you can use the **DATA ENTRY slider** to set the value that will be transmitted for the Volume.

Assigning Other Controllers (CC 00 to 127) to the DATA ENTRY Slider

By assigning a controller number to the **DATA ENTRY slider**, the slider can be used for controlling a wide range of features on your sound module.
Any controller numbered from 0 to 95 (Continuous Controllers) can be assigned. Since the PC-70 isn't equipped with a display which allows you to monitor data when transmitting it, it is not suited for operations which involve Registered and Non-Registered Parameter Numbers.

Controllers 00 through 95 (Continuous Controllers)

Controller No.	Control Function
0.	Bank Select MSB
1.	Modulation
2.	Breath Controller
3.	Undefined
4.	Foot Controller
5.	Portamento Time
6.	Data Entry (Used with RPN/NRPN)
7.	Main Volume
8.	Balance
9.	Undefined
10.	Panpot
11.	Expression Pedal
12.	Effect Control 1
13.	Effect Control 2
14–15	Undefined
16.	General Purpose Controller 1
17.	General Purpose Controller 2
18.	General Purpose Controller 3
19.	General Purpose Controller 4
20–31	Undefined
32.	Bank Select LSB
33–63	LSB for controllers 1-31
64.	Hold 1 (Damper)
65.	Portamento
66.	Sostenuto
67.	Soft Pedal
68.	Undefined
69.	Hold 2 (Freeze)
70–79	Undefined
80.	General Purpose Controller 5
81.	General Purpose Controller 6
82.	General Purpose Controller 7
83.	General Purpose Controller 8
84–90	Undefined
91.	Effect 1 (External Effect) Depth (GS/General MIDI: Reverb Send Level)
92.	Effect 2 (Tremolo) Depth
93.	Effect 3 (Chorus) Depth (GS: Chorus Send Level)
94.	Effect 4 (Celeste) Depth
95.	Effect 5 (Phaser) Depth

Controllers 96 and above (NRPN/RPN, Channel Mode Messages)

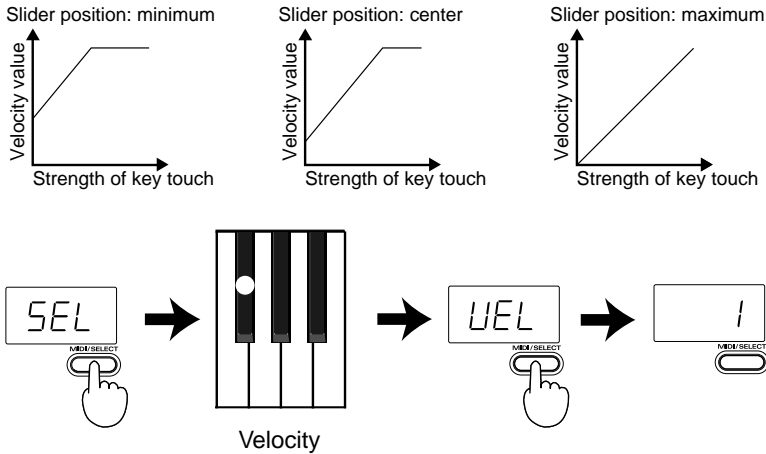| Controller No.	Control Function
96.	Data Increment
97.	Data Decrement
98.	Non-Registered Parameter Number LSB
99.	Non-Registered Parameter Number MSB
100.	Registered Parameter Number LSB
101.	Registered Parameter Number MSB
102–120	Undefined
121–127	Reserved for Channel Mode Messages
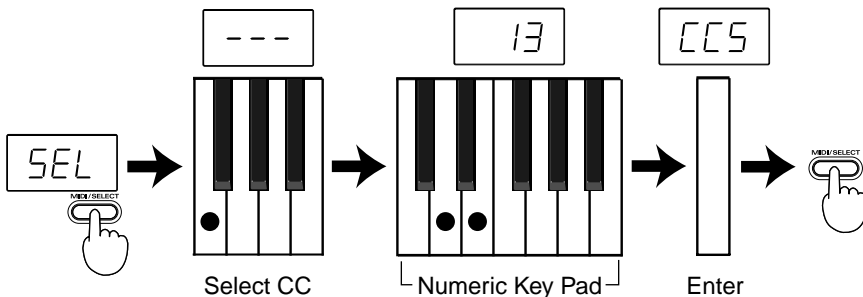
Select CC   Numeric Key Pad   Enter

[Procedure]

1. Set the MIDI transmit channel to match that of the desired Part.
2. Press **MIDI/SELECT [3]** (LED will show "SEL").
3. Press the **F4 white key (CC SELECT) [13]**.
4. Select the Controller Number by pressing keys in the **NUMERIC ENTRY section [17]**.
5. Press **ENTER [19]**.
6. Press **MIDI/SELECT [3]** again to confirm your selection. Now you can use the **DATA ENTRY slider** to transmit the value of the specified Controller Number.

Troubleshooting

Q: The unit cannot be switched on; or it doesn't work at all.

A: Check if you are using the attached AC adaptor. Use only the attached adaptor—using any other adaptor may result in damage, malfunction or electric shock.

Q: The sound module does not respond to the movement of the DATA ENTRY slider.

A: Check if the correct function is assigned to the DATA ENTRY slider. Also, note that the module will sometimes not respond if the slider is moved only slightly. If you are unsure, pull the slider all the way down first and then set it to the desired position.

Q: The sound you have requested cannot be selected.

A: Some GS modules, such as those in the Sound Canvas series, have a switch which allows you to turn on or off the reception of Program Change messages and/or Bank Select messages. Be sure this switch is turned ON.

A: Could the sound module have received a GM System On message (the message that orders a module to function as a General MIDI sound module) before you sent Bank Select messages? Since Bank Selects are not recognized in the General MIDI System Level 1 specifications, the module will ignore them if it is currently behaving as a General MIDI device. To correct this situation, send a GS Reset message (which retrieves the GS default settings), or simply switch the module off, then on again.

 * *The PC-70 cannot transmit GS Reset messages.*

A: When specifying the change in sound, did you supply the complete set of values (values for CC 00/CC 32 and Program Number)? When a change in sound is made using the PC-70, the complete set of three values (value for CC 00 and CC 32, then the Program number) is transmitted, even if only the Program Number has been specified. Note also that the values for a sound selection remain stored in memory until the next sound has been successfully selected. So, if even one out of the complete set of three values is mistakenly not supplied, part of the previous values could be sent along with the newly specified ones. As a result, you might not obtain the sound you hoped for.

A: Does your computer music application use Program Numbers 0 to 127 for sound selection? Since the PC-70 uses numbers 1 to 128, you may need to add one to the number being selected to obtain the correct sound.

Q: The GS module does not respond to Aftertouch messages.

A: A GS sound module will not respond to Aftertouch messages when it's in its default mode. Therefore, you need to set the Aftertouch parameters using Exclusive messages. (Refer to the MIDI Implementation for the sound module in question.) If using a computer-based system, you may be able to easily make the required settings using the software.

MIDI Keyboard controller

Model PC-70

MIDI Implementation Chart

Date : May. 12, 2000

Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel	Default	1	X	
	Changed	1–16	X	
Mode	Default	Mode 3	X	
	Messages	X	X	
	Altered	**************	X	
Note Number :		0–127	X	
	True Voice	**************	X	
Velocity	Note On	O	X	
	Note Off	X	X	
After Touch	Key's	X	X	
	Channel's	O	X	
Pitch Bend		O	X	
Control Change	0–127	O * 1	X	

Function		Transmitted	Recognized
Program Change		1–128	×
	: True Number	*************	×
System Exclusive		×	×
System Common	: Song Position	×	×
	: Song Select	×	×
	: Tune Request	×	×
System Real Time	: Clock	×	×
	: Commands	×	×
	: All Sound Off	×	×
	: Reset All Controller	×	×
Aux	: Local On/Off	×	×
Messages	: All Notes Off	×	×
	: Active Sensing	O	
	: System Reset	×	
Notes		*1 Messages are tx over particular conditions.	

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Specifications

Keyboard

49 keys (velocity sensitive)

MIDI Control

MIDI Channels (1 to 16)
Octave Shift (Up, Down, Standard) (Note Numbers 0 to 127)
Bender/Modulation Wheel (Modulation On/Off)
Data Entry Slider
      Controller Numbers 00/32 (GS Variation selection)
      Channel Aftertouch
      Velocity
      Chorus Send Level
      Reverb Send Level
      Panpot
      Volume
      Others (Controller Numbers 0 to 127)

Display

7 segments, 3 characters (LED)

Rear Panel

Power Switch, Sustain Switch jack, AC Adaptor jack, and MIDI OUT connector

Power Supply

DC 9 V: AC Adaptor (ACP or ACI series)

Current Draw

160 mA

Dimensions

844 (W) x 210 (D) x 73 (H) mm
33-1/4 (W) x 8-5/16 (D) x 2-7/8 (H) inches

Weight

2.7 kg/6 lbs

Accessories

Owner's Manual, MIDI Cable, Pedal Switch, AC Adaptor

  * *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

Information

When you need repair service, call your nearest Roland/EDIROL Service Center or authorized Roland/EDIROL distributor in your country as shown below.

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